

## **LISTING OF THE CLAIMS**

1 (currently amended): A computer based system for production schedule creation ~~devicee~~, comprising:

a production simulator ~~that simulates~~ means for simulating a production process expressing a production state and a production constraint of the production process;

a mathematical expression model holding ~~device~~ that holds means for holding a mathematical expression model which is created by acquiring information relating to creation of a production schedule to which attention is paid, and is a mathematical expression model expressing the production state and the production constraint of the above described production process in a mathematical expression; and

an optimization calculation ~~device~~ that performs means for performing optimization calculation processing by using a predetermined evaluation function for the above described mathematical expression model, and calculates a production instruction for said production simulator means;

wherein the production instruction obtained by said optimization calculation ~~device~~ means is supplied to said production simulator means to cause it to execute simulation, an instruction to perform optimization calculation is output to said optimization calculation ~~device~~ means from said production simulator means whenever a new event occurs, and thereby said production simulator means and said optimization calculation ~~device~~ means are linked to each other to create the production schedule in the above described production process.

Claims 2 to 29: (canceled).

30 (original): A method for creating a production schedule by a production schedule creation device having a production simulator that simulates a production process expressing a production state and a production constraint of the production process, a mathematical expression model holding device that holds a mathematical expression model which is created by acquiring information relating to creation of a production schedule to which attention is paid, and is a mathematical expression model expressing the production state and the production constraint of the above described production process in a mathematical expression, and an optimization calculation device that performs optimization calculation processing by using a predetermined evaluation function for the above described mathematical expression model, and calculates a production instruction for the above described production simulator,

wherein the production instruction obtained by the above described optimization calculation device is supplied to the above described production simulator to cause it to execute simulation, an instruction to perform optimization calculation is output to the above described optimization calculation device from the above described production simulator whenever a new event occurs, and thereby the above described production simulator and the above described optimization calculation device are linked to each other to create the production schedule in the above described production process.

Claims 31 to 33: (canceled).

34 (original): A computer-readable recording medium recording a computer program causing a computer to realize functions as a production simulator that simulates a production process expressing a production state and a production constraint of the

production process, a mathematical expression model holding device that holds a mathematical expression model which is created by acquiring information relating to creation of a production schedule to which attention is paid, and is a mathematical expression model expressing the production state and the production constraint of the above described production process in a mathematical expression, and an optimization calculation device that performs optimization calculation processing by using a predetermined evaluation function for the above described mathematical expression model, and calculates a production instruction for the above described production simulator,

wherein the production instruction obtained by the above described optimization calculation device is supplied to the above described production simulator to cause it to execute simulation, an instruction to perform optimization calculation is output to the above described optimization calculation device from the above described production simulator whenever a new event occurs, and thereby the above described production simulator and the above described optimization calculation device are linked to each other to create the production schedule in the above described production process.

Claims 35 to 46: (canceled).